

ABSTRACT

A heat treatment apparatus 10 comprises a supporting unit 20 for supporting a columnar workpiece 12 turnably, and an induction-heating coil 30 for induction-heating the workpiece 12 supported turnably by the supporting unit 20. Below the workpiece 12 supported by the supporting unit 20, a cooling tank 50 is provided which contains a liquid coolant. The workpiece 12 is made of steel such as carbon steel for mechanical structure, and spring steel. The workpiece 12 is made of a material which has a magnetic transformation point at 770°C . The material is ferromagnetic below this temperature, and becomes paramagnetic above this temperature.